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Instructional Guide for
Fractional Parts of Wholes

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INSTRUCTIONAL GUIDE FOR
FRACTIONAL PARTS OF WHOLE

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The development of an educational aid to introduce fractional parts of wholes is an effort of the Instructional Materials Reference Center at the American Printing House for the Blind (APH). The components of the aid are fractional representations which can be examined and manipulated tactually and can be used to perform operations which show concretely the relationship of fractional parts to each other and to the whole (Huff & Franks, 1973).

Introduction to and Use of Work Tray and Materials

(Place a set of the materials in front of each student. These include the work tray, three plastic forms with one, two and three empty nests, one whole circle, one circle cut into halves, one circle cut into thirds, and one circle cut into fourths.)

LOOK AT THE MATERIALS I HAVE PLACED IN FRONT OF YOU. THESE MATERIALS ARE CALLED FRACTIONAL PARTS OF WHOLE. THIS IS A FRACTIONS GAME. THE GAME HAS A WORK TRAY; FORMS WITH ONE, TWO, AND THREE NESTS; AND A WHOLE CIRCLE AND OTHER CIRCLES CUT INTO TWO, THREE, AND FOUR PARTS.

HERE IS THE WORK TRAY. LOOK AT THE TRAY CAREFULLY. (Place hands.) YOU WILL SEE THAT THE WORK TRAY IS DIVIDED INTO THREE SECTIONS. THE TOP SECTION IS USED TO HOLD THE FORMS WHEN THEY ARE NOT IN USE. THE MIDDLE SECTION HOLDS THE FORMS WHEN THEY ARE IN USE. THE BOTTOM SECTION IS A STORAGE AREA FOR THE CIRCLES CUT INTO PARTS. THE STORAGE AREA IS DIVIDED INTO THREE BOXES TO HOLD THE PARTS OF CIRCLES. HERE

IS THE FIRST BOX (left), HERE IS THE SECOND BOX (middle), HERE IS THE THIRD BOX (right). (Explain carefully the concepts of top, middle, bottom; left, middle, and right as they pertain to the work tray. Be certain that students understand these relationships as related to the work tray. Answer any questions regarding the tray.)

NOW LET'S LOOK AT THE FORMS. (Place forms in front of student.) THERE ARE THREE FORMS. THE FIRST FORM HAS ONE NEST (place hands); THE SECOND FORM HAS TWO NESTS (place hands); THE THIRD FORM HAS THREE NESTS (place hands). SHOW ME THE FORM WITH ONE NEST; TWO NESTS; THREE NESTS. TAKE THE FORM WITH ONE NEST AND PLACE IT IN THE MIDDLE SECTION OF THE WORK TRAY. (Provide help if necessary.) TAKE THE FORM WITH TWO NESTS AND PLACE IT IN THE TOP SECTION OF THE WORK TRAY. TAKE THE FORM WITH THREE NESTS AND PLACE IT IN THE TOP SECTION OF THE TRAY OVER THE FORM WITH TWO NESTS. THAT'S GREAT!

NOW LET'S LOOK AT THE CIRCLES AND PARTS OF CIRCLES. LET'S PLAY A GAME. DO YOU KNOW WHAT A CIRCLE LOOKS LIKE? I WILL SHOW YOU A WHOLE CIRCLE AND ASK YOU TO DO SOME THINGS WITH THE CIRCLE. ARE YOU READY? HERE IS A WHOLE CIRCLE. (Place circle in students hands.) LOOK AT IT CLOSELY. CAN YOU SHOW ME THE ROUNDED SIDE OF THE CIRCLE? (Demonstrate if necessary.) TAKE THE WHOLE CIRCLE AND PLACE IT IN THE SECOND BOX AT THE BOTTOM OF THE TRAY. (Help the student locate the second box and place circle.) NOW, I WANT YOU TO LOOK AT THE NEST THE CIRCLE WILL FIT INTO. (Place student's hands on the single nest located in the middle section of the work tray.) LOOK AT THE INSIDE OF THE NEST. CAN YOU TELL ME WHAT THE INSIDE OF THE NEST IS SHAPED LIKE? (Pause.) THAT'S RIGHT, IT IS SHAPED LIKE

A CIRCLE, THE WHOLE CIRCLE FITS INTO THE NEST. TAKE THE CIRCLE FROM THE SECOND BOX AND PLACE IT IN THE NEST. NOTICE HOW THE CIRCLE FITS INTO THE NEST. THE ROUND SIDE OF THE CIRCLE FITS AGAINST THE ROUND SIDE OF THE NEST. DO YOU HAVE ANY QUESTIONS ABOUT HOW THE CIRCLE FITS INTO THE NEST? (Place circle in second box.) I HAVE PLACED THE CIRCLE IN THE SECOND BOX. PLACE THE CIRCLE INTO THE NEST ONE MORE TIME. (Allow the student to repeat the nesting task until he nests successfully.)

NOW I AM GOING TO SHOW YOU THREE CIRCLES WHICH ARE CUT INTO PARTS. (Use circles cut into two, three, and four parts. Place plastic form with one nest in top section of work tray; remove plastic form with three nests and place in middle section of work tray.) I WILL PLACE EACH CIRCLE IN A BOX AT THE BOTTOM OF THE TRAY. THE FIRST CIRCLE IS CUT INTO TWO PARTS. I AM PLACING THE CIRCLE CUT INTO TWO PARTS IN THE BOX AT THE BOTTOM OF THE TRAY. (Show student left box nest.) THE NEXT CIRCLE IS CUT INTO THREE PARTS. I AM PLACING THE CIRCLE CUT INTO THREE PARTS IN ANOTHER BOX AT THE BOTTOM OF THE TRAY. (Show the student middle box.) THE LAST CIRCLE IS CUT INTO FOUR PARTS. I AM PLACING THE CIRCLE CUT INTO FOUR PARTS IN ANOTHER BOX AT THE BOTTOM OF THE TRAY. (Show the student the right box.)

NOW LET'S PLAY A GAME WITH THE CIRCLES WHICH ARE CUT INTO PARTS. AT THE BOTTOM OF THE TRAY ARE CIRCLES CUT INTO TWO, THREE, AND FOUR PARTS. HERE IS THE CIRCLE CUT INTO TWO PARTS (left box); HERE IS THE CIRCLE CUT INTO THREE PARTS (middle box); HERE IS THE CIRCLE CUT INTO FOUR PARTS (right box).

FIND THE BOX WHICH HAS A CIRCLE DIVIDED INTO TWO PARTS. (Help student locate two-part circle if necessary.) PICK UP ONE OF THE PARTS.

CAN YOU FIT THAT PART IN THE NEST WHICH IS ABOVE THE BOX? PLACE THE PART IN THE NEST SO THAT THE ROUND SIDE OF THE PART IS AGAINST THE ROUND SIDE OF THE NEST. (Allow student one trial. If the student is unsuccessful, demonstrate correct nesting procedure and have student repeat nesting task.) THAT'S GOOD.

NOW FIND THE BOX WHICH HAS A CIRCLE DIVIDED INTO THREE PARTS. (Help the student locate three-part circle if necessary.) PICK UP ONE OF THE PARTS. PLACE ONE PART IN THE NEST SO THAT THE ROUND SIDE OF THE PART IS AGAINST THE ROUND SIDE OF THE NEST. (Allow the student one trial. If the student is unsuccessful, demonstrate correct nesting procedure and have the student repeat nesting task.) THAT'S GOOD.

NOW FIND THE BOX WHICH HAS A CIRCLE DIVIDED INTO FOUR PARTS. (Help the student locate four-part circle if necessary.) PICK UP ONE OF THE PARTS. PLACE ONE PART IN THE NEST SO THAT THE ROUND SIDE OF THE PART IS AGAINST THE ROUND SIDE OF THE NEST. (Allow the student one trial. If the student is unsuccessful, demonstrate correct nesting procedure and have the student repeat nesting task.) THAT'S GOOD. (Return parts to their boxes.)

FIND THE BOX WHICH HAS A CIRCLE DIVIDED INTO TWO PARTS. (Help the student locate two-part circle if necessary.) NOW I WANT YOU TO PLACE THE TWO PARTS IN THE NEST TO FORM A CIRCLE. REMEMBER TO PLACE THE ROUND SIDE OF EACH PART AGAINST THE ROUND SIDE OF THE NEST. (Allow the student one trial. If the student is unsuccessful, demonstrate correct nesting procedure and have the student repeat nesting task.) THAT'S GOOD. FIND THE BOX WHICH HAS A CIRCLE DIVIDED INTO THREE PARTS. CAN YOU FIT TWO OF THE PARTS IN THE NEST? MAKE SURE YOU FIT THE PARTS IN THE NEST SO

THEY ARE NEXT TO EACH OTHER WITH THE ROUND SIDE OF EACH PART AGAINST THE ROUND SIDE OF THE NEST. (Allow the student one trial. If the student is unsuccessful, demonstrate correct nesting procedure and have the student repeat nesting task.) THAT'S GOOD.

CAN YOU FIND THE BOX WHICH HAS A CIRCLE DIVIDED INTO FOUR PARTS? PLACE TWO OF THE FOUR PARTS OF THE CIRCLE IN THE NEST. MAKE SURE YOU FIT THE PARTS IN THE NEST SO THEY ARE NEXT TO EACH OTHER WITH THE ROUND SIDE OF EACH PART AGAINST THE ROUND SIDE OF THE NEST. (Allow the student one trial. If the student is unsuccessful, demonstrate correct nesting procedure and have the student repeat nesting task.) THAT'S GOOD. (Return parts to box.)

CAN YOU FIND THE BOX WHICH HAS A CIRCLE DIVIDED INTO THREE PARTS? PLACE ALL THREE PARTS IN THE NEST TO FORM A CIRCLE. REMEMBER TO PLACE THE ROUND SIDE OF THE PART AGAINST THE ROUND SIDE OF THE NEST. (Allow the student one trial. If the student is unsuccessful, demonstrate correct procedure and have the student repeat nesting task.) THAT'S GOOD.

CAN YOU FIND THE BOX WHICH HAS A CIRCLE DIVIDED INTO FOUR PARTS? PLACE THREE OF THE FOUR PARTS OF THE CIRCLE IN THE NEST. MAKE SURE YOU FIT THE PARTS IN THE NEST SO THEY ARE NEXT TO EACH OTHER WITH THE ROUND SIDE OF EACH PART AGAINST THE ROUND SIDE OF THE NEST. (Allow the student one trial. If the student is unsuccessful, demonstrate correct nesting procedure and have the student repeat the nesting task.) THAT'S GOOD. (Return parts to the box.)

LET'S FIND THE BOX WITH FOUR PARTS AGAIN. PLACE ALL FOUR PARTS IN THE NEST TO FORM A CIRCLE. REMEMBER TO PLACE THE ROUND SIDE OF THE PART AGAINST THE ROUND SIDE OF THE NEST. (Allow the student one

trial. If the student is unsuccessful, demonstrate correct nesting procedure and have the student repeat nesting task.) THAT'S GOOD.

Instructional Program

Level I - Purpose

The purpose of this unit is to introduce tactually and concretely fractional parts of wholes by teaching that a whole (the circle in this instance) may have two, three, or four parts, and that these equal parts are fractional parts of a whole.

Basic concepts

- 1) Two halves make a whole.
- 2) Three thirds make a whole.
- 3) Four fourths make a whole.

Vocabulary

Whole

Fraction (part)

Half, one-half, halves

Third, one-third, thirds

Left, middle, right, top, bottom

Fourth, one-fourth, fourths

Equal (part)

Circle (within the limits of its use herein)

Instructional unit

(Use the single nest with the whole circle. Answer questions throughout the instructional unit.)

I HAVE PLACED THE PLASTIC FORM WITH ONE NEST IN THE MIDDLE SECTION OF YOUR TRAY. (Place whole circle in nest.) A CIRCLE HAS

THE SHAPE OF THE NEST IN FRONT OF YOU. LOOK AT THE WHOLE CIRCLE. IT IS SITTING IN A NEST. IT IS A WHOLE OR COMPLETE CIRCLE. TAKE THE CIRCLE FROM ITS NEST. LOOK AT IT CAREFULLY. NOW PUT DOWN THE CIRCLE AND LOOK AT THE NEST. PUT THE CIRCLE BACK INTO THE NEST.

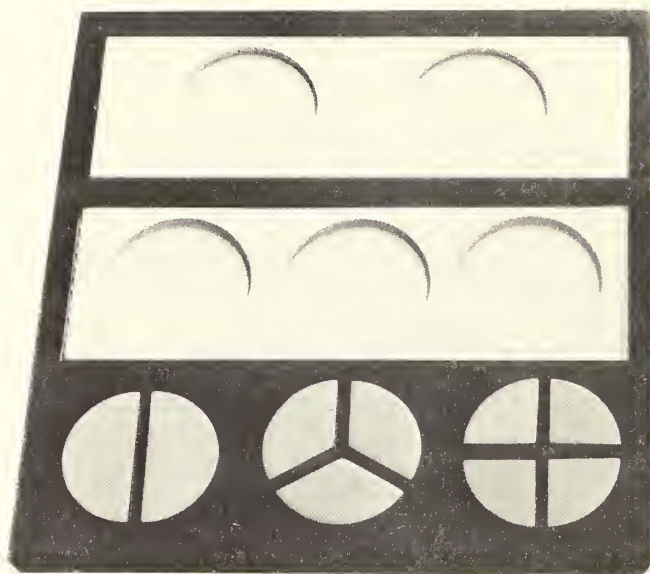
(Be sure that students understand "circle" and "nest" as used in this unit. Remove plastic form with one nest; place plastic form with three nests in middle section of work tray. Place fractional parts in nests as shown in Figure 1 on page 8.)

A CIRCLE CAN BE DIVIDED INTO MORE THAN ONE PART AS I WILL SHOW YOU. I AM PLACING THREE CIRCLES IN THEIR NESTS IN FRONT OF YOU. EACH OF THESE CIRCLES IS DIVIDED INTO MORE THAN ONE PART. REMOVE THE PARTS OF EACH CIRCLE FROM ITS NEST AND THEN PUT THEM BACK INTO THE NEST. WORK WITH ONE CIRCLE AT A TIME. WHEN YOU HAVE FINISHED LOOKING AT THE PARTS OF CIRCLES, RETURN THEM TO THE STORAGE BOXES AT THE BOTTOM OF THE WORK TRAY. REMEMBER TO PUT HALVES IN THE FIRST BOX, THIRDS IN THE SECOND BOX, AND FOURTHS IN THE THIRD BOX.

(Give students time to look at the circles carefully. Demonstrate the acceptable manner for nesting parts, i.e., curved side of part placed against curved side of nest. Repeat if necessary. When the student has finished the task have the student remove all the fractional parts from the nest and place the parts in the storage boxes at the bottom of the work tray. Using the three empty nests fill the first nest on the student's left with halves.)

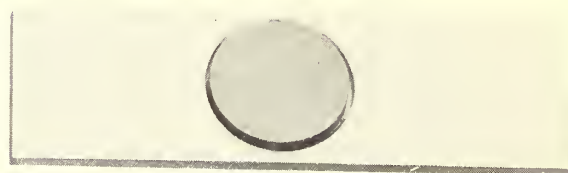
I AM FILLING THE FIRST NEST WITH TWO EQUAL PARTS CALLED HALVES. TWO HALVES MAKE A WHOLE.

TAKE THE TWO PARTS OUT OF THE NEST. COUNT THEM. NOTICE THAT THE TWO PARTS ARE THE SAME SIZE. PUT ONE HALF ON TOP OF THE



Fractional Parts in Storage Area

Work Tray Containing Nests



OTHER HALF. ONE COVERS THE OTHER. (Place hands, if necessary, to indicate that the halves are the same size.) HOW MANY HALVES MAKE A WHOLE? RETURN THE HALVES TO THEIR NEST.

(Fill the middle nest with thirds.)

I AM FILLING THE MIDDLE NEST WITH THREE EQUAL PARTS CALLED THIRDS. THREE-THIRDS MAKE A WHOLE.

TAKE THE THREE PARTS OUT OF THE NEST. COUNT THEM. NOTICE THE SIZE OF EACH PART. ARE THE PARTS EQUAL IN SIZE? HOW MANY PARTS DO YOU HAVE? THREE-THIRDS MAKE A WHOLE. RETURN THE THIRDS TO THEIR NEST.

(Fill the third nest on the student's right with fourths.)

I AM FILLING THE THIRD NEST WITH FOUR PARTS CALLED FOURTHS. FOUR-FOURTHS MAKE A WHOLE.

TAKE THE FOUR EQUAL PARTS OUT OF THE NEST. COUNT THEM. NOTICE THE SIZE OF EACH PART. HOW MANY PARTS DO YOU HAVE? HOW CAN YOU TELL THEY ARE EQUAL PARTS? FOUR-FOURTHS MAKE A WHOLE. COUNT THEM. RETURN THE FOURTHS TO THEIR NEST.

(Remove the three empty nests and parts of circles from the middle section of work tray. Mix up the parts on the student's desk below the tray. Place the single nest in the middle section of the work tray.

Performance Check

YOU WILL USE THE SINGLE NEST AND ALL THE PARTS OF THE CIRCLES TO ANSWER THE FOLLOWING QUESTIONS.

WHEN I TELL YOU TO BEGIN, I WANT YOU TO PUT ALL OF THE HALVES TOGETHER IN THE LEFT BOX, ALL OF THE THIRDS IN THE MIDDLE BOX, AND ALL

OF THE FOURTHS IN THE RIGHT BOX IN THE BOTTOM SECTION OF THE TRAY. HALVES ON THE LEFT, THIRDS IN THE MIDDLE, AND FOURTHS ON THE RIGHT.

LET'S BEGIN -

- 1) PUT ALL OF THE HALVES TOGETHER IN THE LEFT BOX.
- 2) PUT ALL OF THE THIRDS TOGETHER IN THE MIDDLE BOX.
- 3) PUT ALL OF THE FOURTHS TOGETHER IN THE RIGHT BOX.
- 4) PLACE THE THREE THIRDS WHICH FORM A WHOLE CIRCLE IN THE NEST. NOW REMOVE THE PARTS IN THE NEST AND RETURN THEM TO THE MIDDLE BOX.
- 5) PLACE THE TWO HALVES WHICH FORM A WHOLE CIRCLE IN THE NEST. NOW REMOVE THE PARTS FROM THE NEST AND RETURN THEM TO THE LEFT BOX.
- 6) PLACE THE FOUR FOURTHS WHICH FORM A WHOLE CIRCLE IN THE NEST. NOW REMOVE THE PARTS FROM THE NEST AND RETURN THEM TO THE RIGHT BOX.

Level II - Purpose

The purpose of this unit is to teach the relationship of the fractional parts, one-fourth, two-fourths, one-half, three-fourths, one-third, and two-thirds to a whole, using the circle.

Basic concepts

- 1) If a whole is separated into four parts of the same size and shape, one-fourth compares one part with the original whole and with two-fourths. One-half (two-fourths) compares two parts with the original whole, and three-fourths compares three parts with the original whole.

- 2) If a whole is separated into three parts of the same size and shape, one-third compares one part with the original whole and two-thirds compares two parts with the original whole.

Vocabulary

One-fourth

One-third

Two-fourths (one-half)

Two-thirds

Three-fourths

Instructional unit

(Answer questions throughout the instructional unit.

Review Level I. Answer questions. Use the single nest filled with fourths for each child. If necessary, demonstrate acceptable manner for nesting parts, i.e., curved side of part placed against curved side of nest.)

THIS NEST IS FILLED WITH PARTS OF A CIRCLE. HOW MANY EQUAL PARTS ARE IN IT? (Pause.) FOUR IS CORRECT. EACH PART IS CALLED ONE-FOURTH OF A WHOLE CIRCLE.

HOW MANY FOURTHS MAKE A WHOLE CIRCLE? (Pause.) TAKE ALL OF THE PARTS OUT OF THE NEST AND PUT THEM IN THE MIDDLE BOX AT THE BOTTOM OF THE TRAY. COUNT THEM. HOW MANY FOURTHS ARE THERE? (Pause.) NOW, PLACE ONE-FOURTH OF THE CIRCLE IN THE NEST. ADD ANOTHER ONE-FOURTH PART TO THE NEST TO COVER TWO-FOURTHS OF THE NEST. TWO-FOURTHS IS ONE-HALF OF THE CIRCLE. NOTICE THAT TWO-FOURTHS COVERS ONE-HALF OF THE NEST. ANY QUESTIONS? ADD ANOTHER ONE-FOURTH PART TO THE NEST. THERE ARE NOW THREE-FOURTHS IN THE NEST. NOTICE THAT THREE-FOURTHS OF THE NEST IS COVERED. ANY QUESTIONS? ADD ANOTHER ONE-FOURTH PART TO THE NEST. NOW THE NEST IS FILLED. HOW MANY FOURTHS MAKE A WHOLE

CIRCLE? (Pause.) FOUR IS CORRECT. ANY QUESTIONS?

Performance Check

(Use single nest and place fourths in the middle box at the bottom of the work tray.)

I AM PLACING THE EMPTY NEST IN FRONT OF YOU. I HAVE REMOVED ALL OF THE PARTS AND HAVE PLACED THEM IN THE MIDDLE BOX AT THE BOTTOM OF THE TRAY IN FRONT OF YOU. I WANT YOU TO ANSWER SOME QUESTIONS BY PLACING PARTS IN THE NEST.

LET'S BEGIN -

- 1) PUT IN ENOUGH PARTS TO COVER THREE-FOURTHS OF THE NEST. NOW REMOVE THE PARTS FROM THE NEST AND RETURN THEM TO THE MIDDLE BOX.
- 2) PUT IN ENOUGH PARTS TO COVER ONE-HALF OF THE NEST. NOW REMOVE THE PARTS FROM THE NEST AND RETURN THEM TO THE MIDDLE BOX.
- 3) PUT IN ENOUGH PARTS TO COVER ONE-FOURTH OF THE NEST. NOW REMOVE THE PARTS FROM THE NEST AND RETURN THEM TO THE MIDDLE BOX.
- 4) PUT IN ENOUGH PARTS TO COVER TWO-FOURTHS OF THE NEST. NOW REMOVE THE PARTS FROM THE NEST AND RETURN THEM TO THE MIDDLE BOX.

(Remove fourths from middle box. Place thirds in single nest.)

I AM FILLING THE NEST WITH PARTS OF A CIRCLE AGAIN. LOOK AT THE PARTS IN THE NEST. HOW MANY EQUAL PARTS ARE THERE? (Pause.) THREE IS CORRECT. EACH PART IS CALLED ONE-THIRD OF A CIRCLE.

HOW MANY THIRDS MAKE A WHOLE CIRCLE? (Pause.) TAKE ALL THE PARTS OUT OF THE NEST. COUNT THEM. HOW MANY THIRDS ARE THERE? (Pause.) THREE IS CORRECT. NOW, PLACE ONE-THIRD OF THE CIRCLE IN THE NEST. NOTICE ONE-THIRD OF THE NEST IS COVERED. NOW ADD ANOTHER ONE-THIRD. NOTICE TWO-THIRDS OF THE CIRCLE IS COVERED. ADD ANOTHER THIRD. NOW THE NEST IS FILLED. HOW MANY THIRDS MAKE A WHOLE CIRCLE? (Pause.) REMOVE THE THIRDS AND COUNT THEM. ANY QUESTIONS?

Performance Check

(Use single empty nest and thirds of circle.)

AGAIN, I AM PLACING AN EMPTY NEST IN FRONT OF YOU. THE PARTS YOU WILL USE ARE IN THE MIDDLE BOX AT THE BOTTOM OF THE TRAY. I WANT YOU TO ANSWER SOME QUESTIONS BY PLACING THE PARTS IN THE NEST.

LET'S BEGIN -

- 5) PUT IN ENOUGH PARTS TO COVER ONE-THIRD OF THE NEST. NOW REMOVE THE PARTS FROM THE NEST AND RETURN THEM TO THE MIDDLE BOX.
- 6) PUT IN ENOUGH PARTS TO COVER TWO-THIRDS OF THE NEST. NOW REMOVE THE PARTS FROM THE NEST AND RETURN THEM TO THE MIDDLE BOX.

Level III - Purpose

To teach the size relationships of the fractional parts presented in Level I and II, and to teach comparison of sizes of fractional parts (smaller than, the same as or equal to, and larger than) when wholes (circles) are used.

Basic concepts

- 1) One-fourth of a circle is smaller than one-third of a circle.
- 2) Two-fourths and one-half of a circle are the same or are equal.
- 3) Two-fourths of a circle are larger than one-third of a circle.
- 4) Two-thirds of a circle are larger than two-fourths of a circle.
- 5) Three-fourths of a circle are larger than two-thirds of a circle.
- 6) One-third of a circle is larger than one-fourth of a circle.

Vocabulary

The same or equal to

Larger than

Smaller than

Instructional unit

(Go slowly; place hands; answer questions. Use two empty nests and parts of the circles. Place the parts below the boxes at the bottom of the tray. If necessary, demonstrate acceptable manner for nesting parts, i.e., curved side of part placed against curved side of nest.)

HERE ARE THE PARTS OF THE CIRCLES. PUT ALL OF THE HALVES TOGETHER IN THE LEFT BOX AT THE BOTTOM OF YOUR TRAY. PUT ALL OF THE THIRDS IN THE MIDDLE BOX, AND ALL OF THE FOURTHS IN THE RIGHT BOX.

HERE ARE TWO EMPTY NESTS. IN THE RIGHT NEST PUT ENOUGH PARTS TO COVER ONE-FOURTH OF THE CIRCLE. IN THE LEFT NEST PUT ENOUGH PARTS TO COVER ONE-THIRD OF THE CIRCLE. PUT YOUR HAND ON THE SMALLER PART. WHICH IS SMALLER, ONE-FOURTH OR ONE-THIRD? (If student is unable to discriminate the size difference remove the parts and superimpose one part on another to demonstrate the difference in size.)

TAKE ALL THE PARTS OUT OF THE NEST AND PUT THEM BACK WHERE THEY WERE. NOW, IN THE LEFT NEST PUT ENOUGH PARTS TO COVER TWO-FOURTHS OF THE CIRCLE. IN THE RIGHT NEST PLACE ONE-HALF OF A CIRCLE. IS THE PART COVERED IN THE RIGHT NEST LARGER, SMALLER OR THE SAME SIZE AS THE PART COVERED IN THE LEFT NEST? LARGER, SMALLER, THE SAME? RIGHT. TWO-FOURTHS IS EQUAL TO ONE-HALF. (Demonstrate size difference.)

TAKE ALL THE PARTS OUT OF THE NEST AND PUT THEM BACK WHERE THEY WERE. IN THE RIGHT NEST PUT ENOUGH PARTS TO COVER TWO-FOURTHS OF THE CIRCLE. IN THE LEFT NEST PUT ENOUGH PARTS TO COVER ONE-THIRD OF THE CIRCLE. WHICH IS LARGER, TWO-FOURTHS OR ONE-THIRD? PUT YOUR HAND ON THE LARGER PART. (Demonstrate size difference.)

TAKE ALL THE PARTS OUT OF THE NESTS AND PUT THEM BACK WHERE THEY WERE. PUT IN ENOUGH PARTS TO COVER TWO-THIRDS OF THE CIRCLE IN THE RIGHT NEST. PUT IN ENOUGH PARTS TO COVER TWO-FOURTHS OF THE CIRCLE IN THE LEFT NEST. PUT YOUR HAND ON THE LARGER PART. WHICH IS LARGER TWO-THIRDS OR TWO-FOURTHS? THAT'S RIGHT TWO-THIRDS IS LARGER. (Demonstrate size difference.)

TAKE ALL THE PARTS OUT OF THE NESTS AND PUT THEM BACK WHERE THEY WERE. PUT IN ENOUGH PARTS TO COVER THREE-FOURTHS OF THE CIRCLE

IN THE LEFT NEST. PUT IN ENOUGH PARTS TO COVER TWO-THIRDS OF THE CIRCLE IN THE RIGHT NEST. PUT YOUR HAND ON THE SMALLER PART. WHICH IS LARGER, THREE-FOURTHS, OR TWO-THIRDS? THREE-FOURTHS IS LARGER. HOW CAN YOU TELL THAT THREE-FOURTHS IS LARGER THAN TWO-THIRDS? (Pause.) WHICH COVERS THE LARGER PART OF THE NEST, THREE-FOURTHS OR TWO-THIRDS? (Demonstrate size difference.) ANY QUESTIONS?

TAKE ALL THE PARTS OUT OF THE NESTS AND PUT THEM BACK WHERE THEY WERE. IN THE RIGHT NEST PUT IN ENOUGH PARTS TO COVER ONE-THIRD OF THE NEST. IN THE LEFT NEST PUT IN ENOUGH PARTS TO COVER ONE-FOURTH OF THE NEST. PUT YOUR HAND ON THE LARGER PART. WHICH IS LARGER, ONE-THIRD OR ONE-FOURTH? ONE-THIRD IS LARGER. LOOK AT EACH PART CLOSELY. WHICH PART IS SMALLER, ONE-THIRD OR ONE-FOURTH? ANY QUESTIONS? (Demonstrate size difference.) TAKE ALL THE PARTS OUT OF THE NEST AND PUT THEM BACK WHERE THEY WERE.

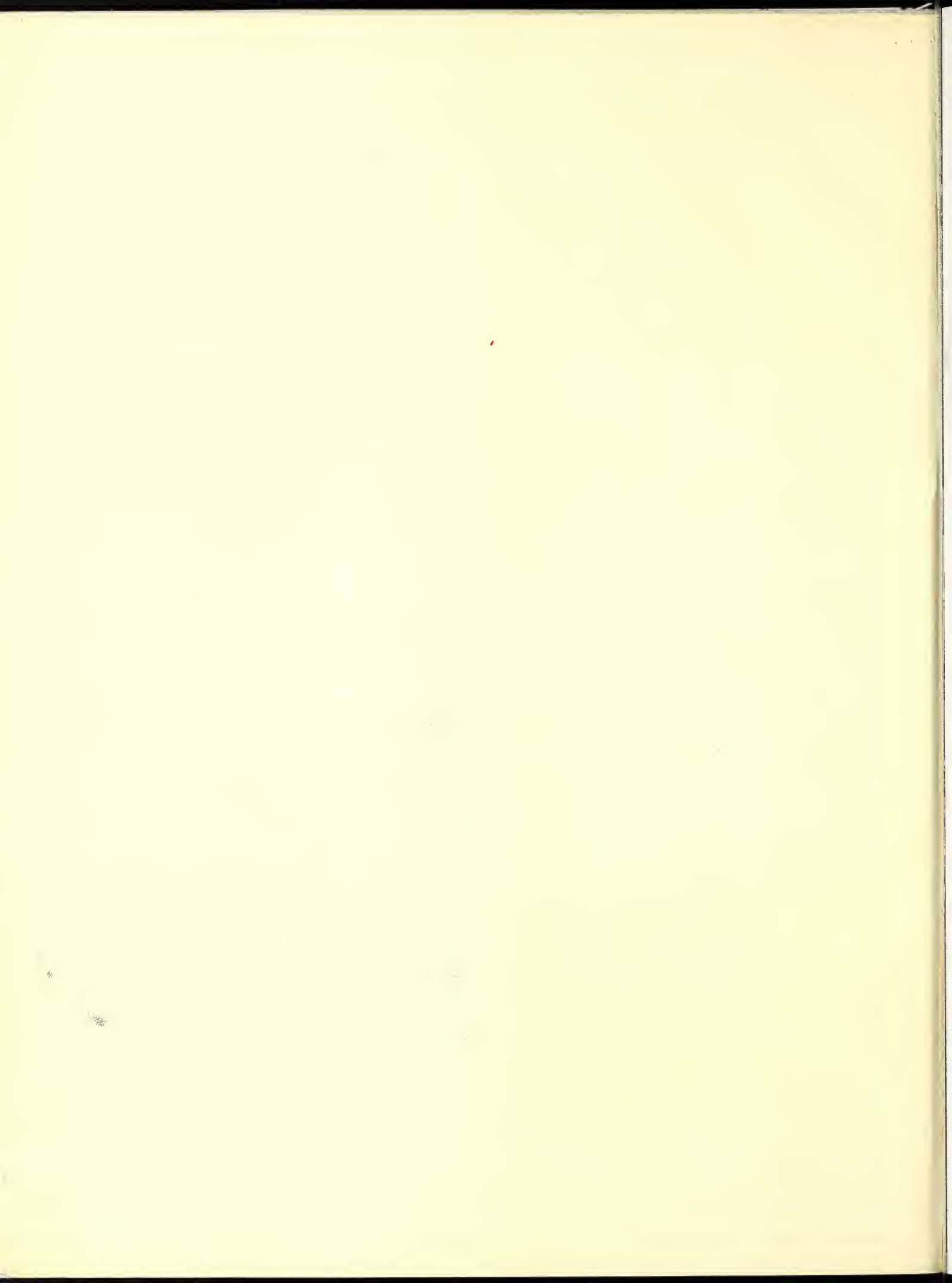
(Review. Repeat all items, if necessary.)

Performance Check

(Use the double nest with appropriate number of fourths, thirds, and halves placed in each storage box. Place the parts in the bottom section of tray.)

- 1) PLACE ONE-THIRD OF A CIRCLE IN THE LEFT NEST. PLACE ONE-FOURTH OF A CIRCLE IN THE RIGHT NEST. WHICH FRACTIONAL PART IS LARGER? PUT THE PARTS BACK INTO THE CORRECT STORAGE BOX.
- 2) PLACE TWO-FOURTHS OF A CIRCLE IN THE LEFT NEST. PLACE ONE-THIRD OF A CIRCLE IN THE RIGHT NEST. WHICH FRACTIONAL PART IS LARGER? PUT THE PARTS BACK INTO THE CORRECT STORAGE BOX.

- 3) PLACE THREE-FOURTHS OF A CIRCLE IN THE LEFT NEST.
PLACE TWO-THIRDS OF A CIRCLE IN THE RIGHT NEST. WHICH
IS LARGER? PUT THE PARTS BACK INTO THE STORAGE BOX.
- 4) PLACE TWO-FOURTHS OF A CIRCLE IN THE LEFT NEST. PLACE
ONE-HALF OF A CIRCLE IN THE RIGHT NEST. ARE THE FRAC-
TIONAL PARTS IN THE RIGHT NEST SMALLER, LARGER, OR THE
SAME SIZE AS THE FRACTIONAL PARTS IN THE LEFT NEST?
PUT THE PARTS BACK INTO THE STORAGE BOX.
- 5) PLACE TWO-THIRDS OF A CIRCLE IN THE LEFT NEST. PLACE
TWO-FOURTHS OF A CIRCLE IN THE RIGHT NEST. WHICH IS
LARGER? PUT THE PARTS BACK INTO THE STORAGE BOX.
- 6) PLACE ONE-FOURTH OF A CIRCLE IN THE LEFT NEST. PLACE
ONE-THIRD OF A CIRCLE IN THE RIGHT NEST. WHICH
FRACTIONAL PARTS IS SMALLER? PUT THE PARTS BACK INTO
THE STORAGE BOX.







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